Amendments to the Claims

This listing of claims replaces all prior versions, and listings, of claims in the above-identified application:

1. (Currently Amended) A graphical user display for providing real-time process information to a user for a process that is operable under control of one or more process variables, wherein one or more of the process variables has high and low process limit values associated therewith, the graphical user display comprising one or more graphical devices, wherein each graphical device corresponds to a process variable, wherein at least one graphical device for a corresponding process variable comprises:

a gauge axis;

a first pair of high and low limit elements representative of user set engineering hard high and low limit values for the corresponding process variable that define a range in which operator set high and low limit values are set and a second pair of high and low limit elements representative of the operator set high and low limit values for the corresponding process variable which define a range in which the process is free to operate, wherein each of the operator set high and low limit values are adjustable so as to exert influence on the process, where the first and second pair of high and low limit elements are displayed on the gauge axis; and

a graphical shape displayed along the gauge axis representative of a value of the corresponding process variable relative to the process limit values.

2. (canceled)

3. (previously presented) The graphical user display of claim 1, wherein the at least one graphical device comprises a first pair of parallel lines extending orthogonal to the gauge axis representative of the engineering hard high and low limit values for the corresponding process

variable and a second pair of pair of parallel lines extending orthogonal to the gauge axis representative of the operator set high and low limit values for the corresponding process variable.

4. (original) The graphical user display of claim 3, wherein a single pair of parallel lines extending orthogonal to the gauge axis represent both the engineering hard high and low limit values and the operator set high and low limit values for the corresponding process variable when the operator set high and low limit values are set at the engineering hard high and low limit values.

5. (original) The graphical user display of claim 3, wherein the second pair of parallel lines extending orthogonal to the gauge axis representative of operator set high and low limit values are displayed at a shorter length than and between the first pair of parallel lines extending orthogonal to the gauge axis representative of engineering hard high and low limit values along the gauge axis.

6. Canceled

7. (previously presented) The graphical user display of claim 3, wherein the graphical shape is positioned adjacent one of the first or second pair of high and low limit elements when the value for the corresponding process variable is within a certain range of the engineering hard high and low limit values or the operator set high and low limit values.

8. (previously presented) The graphical user display of claim 3, wherein the graphical shape is positioned outside of the parallel lines of the second pair of high and low limit elements when the value for the corresponding process variable is outside the operator set high and low process limit values by a predetermined percentage.

9. (previously presented) The graphical user display of claim 1, wherein the graphical device further comprises a graphical symbol representative of an optimization characteristic for the corresponding process variable.

10. (original) The graphical user display of claim 9, wherein the graphical symbol is representative of a corresponding process variable to be maximized.

11. (original) The graphical user display of claim 9, wherein the graphical symbol is representative of a corresponding process variable to be minimized.

12. (original) The graphical user display of claim 9, wherein the graphical symbol is representative of a corresponding process variable which is to be held at a resting value.

13. (previously presented) The graphical user display of claim 1, wherein the at least one graphical device further comprises a graphical symbol representative of the corresponding process variable being constrained to set point.

14. (previously presented) The graphical user display of claim 1, wherein the at least one graphical device further comprises a graphical symbol representative of the corresponding process variable being wound up.

15. (original) The graphical user display of claim 1, wherein the graphical shape is a circle positioned along the gauge axis.

16. (original) The graphical user display of claim 1, wherein the graphical shape has a color of a set of colors that reflects the state of the current value for the corresponding process variables.

17. (previously presented) The graphical user display of claim 16, wherein a color for the graphical shape represents one of a current value of the corresponding process variable being within the second pair of high and low limit values, the current value of the corresponding process variable being within a percentage of one of the second pair of high and low limit values, and the current value of the corresponding process variable being outside of the second pair of high and low limit values.

18. (original) The graphical user display of claim 1, wherein the process is a continuous multivariable process being performed at a process plant, wherein the continuous multivariable process is operable under control of at least manipulated variables and controllable variables of the one or more process variables.

19. (previously presented) The graphical user display of claim 18, wherein the graphical user display comprises a matrix display having the manipulated variables displayed along a first axis thereof and the controlled variables displayed along a second axis thereof, wherein each of the manipulated and controlled variables includes a graphical device displayed in proximity thereto.

20. (original) The graphical user display of claim 1, wherein each graphical device displayed is selectable for navigation to more detailed information for process variable corresponding to the selected graphical device, wherein the detail information is displayed on the same screen therewith.

21. (Currently Amended) A computer implemented method for providing a graphical user display for providing real-time process information to a user for a process that is operable under control of one or more process variables, wherein one or more of the process variables has high and low process limit values associated therewith, the method comprising the step of displaying at least one graphical device for a corresponding process variable, wherein displaying the at least

one graphical device comprises:

displaying a gauge axis;

displaying a first pair of high and low limit elements representative of user set engineering hard high and low limit values for the corresponding process variable that define a range in which operator set high and low limit values are set and a second pair of high and low elements representative of the operator set high and low limit values for the corresponding process variable on the gauge axis which define a range in which the process is free to operate, wherein each of the operator set high and low limit values are adjustable so as to exert influence on the process; and

displaying a graphical shape along the gauge axis representative of a value of the corresponding process variable relative to the high and low process limit values.

22. Canceled

23. (previously presented) The method of claim 21 , wherein displaying the first pair of high and low limit elements representative of engineering hard high and low limit values comprises displaying a first pair of parallel lines extending orthogonal to the gauge axis, and further wherein displaying the second pair of high and low limit elements representative of operator set high and low limit values comprises displaying a second pair of parallel lines extending orthogonal to the gauge axis.

24. (previously presented) The method of claim 21, wherein displaying at least one pair of high and low limit elements comprises displaying a single pair of parallel lines extending orthogonal to the gauge axis to represent both the engineering hard high and low limit values and the operator set high and low limit values for the corresponding process variable when the operator set high and low limit values are set at the engineering hard high and low limit values.

25. (original) The method of claim 23, wherein the second pair of parallel lines extending orthogonal to the gauge axis representative of operator set high and low limit values are displayed at a shorter length than and between the first pair of parallel lines extending orthogonal to the gauge axis representative of engineering hard high and low limit values.

26. Canceled

27. (previously presented) The method of claim 23, wherein displaying the graphical shape along the gauge axis comprises displaying the graphical shape at position adjacent one of the first or second pair of high and low limit elements when the value for the corresponding process variable is within a certain range of one of the high and low process limit values.

28. (previously presented) The method of claim 23, wherein displaying the graphical shape along the gauge axis comprises displaying the graphical shape at position outside of the parallel lines when the value for the corresponding process variable is outside the second pair of high and low elements representative of operator set high and low process limit values by at least a predetermined percentage.

29. (previously presented) The method of claim 21, wherein the method further comprises displaying a graphical symbol representative of an optimization characteristic for the corresponding process variable along the gauge axis.

30. (original) The method of claim 29, wherein the graphical symbol is representative of a corresponding process variable to be maximized.

31. (original) The method of claim 29, wherein the graphical symbol is representative of a corresponding process variable to be minimized.

32. (original) The method of claim 29, wherein the graphical symbol is representative of a corresponding process variable which is to be held at a resting value.

33. (previously presented) The method of claim 21, wherein displaying the graphical shape along the gauge axis further comprises displaying a graphical symbol representative of the corresponding process variable being constrained to set point.

34. (previously presented) The method of claim 21, wherein displaying the graphical shape along the gauge axis further comprises displaying a graphical symbol representative of the corresponding process variable being wound up.

35. (previously presented) The method of claim 21, wherein displaying the graphical shape along the gauge axis comprises displaying a circle along the gauge axis.

36. (previously presented) The method of claim 21, wherein the method further comprises:

determining a state of a current value for the corresponding process variable; and

displaying the graphical shape in a color of a set of colors that reflects the determined state for the corresponding variable.

37. (previously presented) The method of claim 36, wherein determining the state of the current value comprises determining whether the current value of the corresponding process variable is within the second pair of high and low limit values, whether the current value of the corresponding process variable is within a certain percentage of one of the second pair of high and low limit values, and whether the current value of the corresponding process variable is outside of the second pair of high and low limit values.

38. (previously presented) The method of claim 21, wherein the process is a continuous multivariable process being performed at a process plant, wherein the continuous multivariable

is operable under control of at least manipulated variables and controlled variables of the one or more process variables, and further wherein the method comprises:

displaying a matrix display having the manipulated variables displayed along a first axis thereof and the controlled variables displayed along a second axis thereof; and

displaying a graphical device in proximity to each of the manipulated variables and controlled variables.

39. (previously presented) The method of claim 21, wherein the method further comprises: receiving user input to select a displayed graphical device; and

displaying detailed information for the process variable corresponding to the selected graphical device, wherein the detailed information is displayed on the same screen with the graphical device.

40. (Currently Amended) A graphical user display comprising one or more graphical devices for providing real-time process information to a user for a continuous multivariable process being performed at a process plant and operable under control of at least manipulated variables and controlled variables of a plurality of process variables, wherein the graphical user display comprises a display providing the manipulated variables and the controlled variables, and wherein one or more of the process variables comprise high and low process limit values associated therewith, wherein each of a plurality of the one or more graphical devices corresponds to a process variable, wherein each graphical device corresponding to a process variable comprises:

a gauge axis;

a first pair of high and low limit elements representative of user set engineering hard high and low limit values for the corresponding process variable that define a range in which operator set high and low limit values are set and a second pair of high and low limit elements representative of the operator set high and low limit values for the corresponding process variable which define a range in which the process is free to operate, wherein each of the

operator set high and low limit values are adjustable so as to exert influence on the process.

where the first and second pair of high and low limit elements are displayed on the gauge axis; and

a graphical shape displayed along the gauge axis representative of a value of the corresponding process variable relative to process limit values that provides real-time process information to a user for the process, and further wherein each of the plurality of graphical devices is displayed in proximity to one of the manipulated and controlled variables.

41. (previously presented) The graphical user display of claim 40, wherein the display providing the manipulated variables and controlled variables comprises a matrix display having the manipulated variables displayed along a first axis thereof and the controlled variables displayed along a second axis thereof.

42. (previously presented) The graphical user display of claim 40, wherein at least one graphical device displayed is selectable for navigation to more detail information for a process variable corresponding to the selected graphical device, wherein the detail information is displayed on the same screen therewith.

43. (Currently Amended) A graphical user display for providing real-time process information to a user for a process that is operable under control of one or more process variables, wherein one or more of the process variables has high and low process limit values associated therewith, the graphical user display comprising one or more graphical devices, wherein each of a plurality of the graphical devices correspond to a process variable, wherein at least one graphical device corresponding to a process variable comprises:

a gauge axis;

a first pair of high and low limit elements representative of user set engineering hard and low limit values for the corresponding process variable that define a range in which operator set high and low limit values are set and a second pair of high and low limit elements representative

of the operator set high and low limit values for the corresponding process variable which define a range in which the process is free to operate, wherein each of the operator set high and low limit values are adjustable so as to exert influence on the process. where the first and second pair of high and low limit elements are displayed on the gauge axis;

a graphical shape displayed along the gauge axis representative of a value of the corresponding process variable relative to the process limit values; and

a graphical symbol representative of an optimization characteristic for the corresponding process variable.

44. (previously presented) The graphical user display of claim 43, wherein the graphical symbol is representative of a corresponding process variable to be maximized.

45. (previously presented) The graphical user display of claim 43, wherein the graphical symbol is representative of a corresponding process variable to be minimized.

46. (previously presented) The graphical user display of claim 43, wherein the graphical symbol is representative of a corresponding process variable which is to be held at a resting value.

47. (Currently Amended) A computer implemented method for providing a graphical user display for providing real-time process information to a user for a process that is operable under control of one or more process variables, wherein one or more of the process variables has high and low process limit values associated therewith, wherein the method comprises displaying a plurality of graphical devices for corresponding process variables, wherein displaying at least one of the graphical devices comprises:

displaying a gauge axis;

displaying a first pair of high and low limit elements representative of user set enginecring hard high and low limit values for the corresponding process variable that define a

range in which operator set high and low limit values are set and a second pair of high and low elements representative of the operator set high and low limit values for the corresponding process variable on the gauge axis which define a range in which the process is free to operate, wherein each of the operator set high and low limit values are adjustable so as to exert influence on the process;

displaying a graphical shape along the gauge axis representative of a value of the corresponding process variable relative to the high and low process limit values; and

displaying a graphical symbol representative of an optimization characteristic for the corresponding process variable along the gauge axis.

48. (previously presented) The method of claim 47, wherein the graphical symbol is representative of a corresponding process variable to be maximized.

49. (previously presented) The method of claim 47, wherein the graphical symbol is representative of a corresponding process variable to be minimized.

50. (previously presented) The method of claim 47, wherein the graphical symbol is representative of a corresponding process variable which is to be held at a resting value.

51. (Currently Amended) A computer implemented method for providing a graphical user display for providing real-time process information to a user for a continuous multivariable process being performed at a process plant, wherein the continuous multivariable process is operable under control of at least manipulated variables and controlled variables, wherein one or more of the manipulated variables and controlled variables has high and low process limit values associated therewith, wherein the method comprises displaying a matrix display having the manipulated variables displayed along a first axis thereof and the controlled variables displayed along a second axis thereof, and further wherein the method comprises displaying a graphical device in proximity to each of the manipulated variables and controlled variables, wherein

displaying the graphical device comprises:

displaying a gauge axis;

displaying a first pair of high and low limit elements representative of user set engineering hard high and low limit values for the corresponding process variable that define a range in which operator set high and low limit values are set and a second pair of high and low elements representative of the operator set high and low limit values for the corresponding process variable on the gauge axis which define a range in which the process is free to operate, wherein each of the operator set high and low limit values are adjustable so as to exert influence on the process; and

displaying a graphical shape along the gauge axis representative of a value of the corresponding process variable relative to the high and low process limit values.